REMARKS

Receipt of the office action mailed June 18, 2008 is acknowledged. Claims 1-8, 11-16, 19, and 20 are pending in the application. Claims 1, 2, 4, 6, 8, 11, 13, 14, 16, 19, and 20 are rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,265,995 (Beck) in view of U.S. Patent No. 5,108,253 (Kobayashi) and U.S. Patent No. 5,193,658 (Tellden). Claim 3 is rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of Kobayashi, Tellden and the Examiner's comments. Claims 5, 7, and 12 are rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of Kobayashi and Tellden and further in view of U.S. Patent Publication No. 2003/0156937 (Brown). Claim 15 is rejected under 35 U.S.C. § 103(a) as unpatentable over Beck in view of Kobayashi and Tellden and further in view of U.S. Patent No. 4,280,783 (Hayward). New claim 21 is submitted herewith.

Applicant respectfully traverses the rejection of claims 1-8, 11-16, 19, and 20. Applicant respectfully requests reconsideration and withdrawal of these rejections.

In accordance with an aspect of the invention, the claimed excavating and loading machine mounts an excavating arm to a rotatable superstructure. The excavating arm is slewable relative to the superstructure about a generally upright slew axis. This combination produces at least three advantages over prior art excavators and loaders, such as Beck. First, the slewable excavating arm is more capable of digging in tight or limited spaces. Second, the operator has a better view of the digging location because the excavating arm 30 can be slewed such that the operator has a direct and unobstructed view of the bucket 35 (i.e., the operator's view of the bucket is not obstructed by the two arm sections 30a, 30b). Third, the vertical rotation requires a mount that spaces the axis of rotation a distance away from the cab again improving the operator's view of the excavating arm in general and the bucket in particular. For example, see Fig. 1 of the instant application reproduced below (reference letter "Z" and accompanying reference lines are added for discussion):

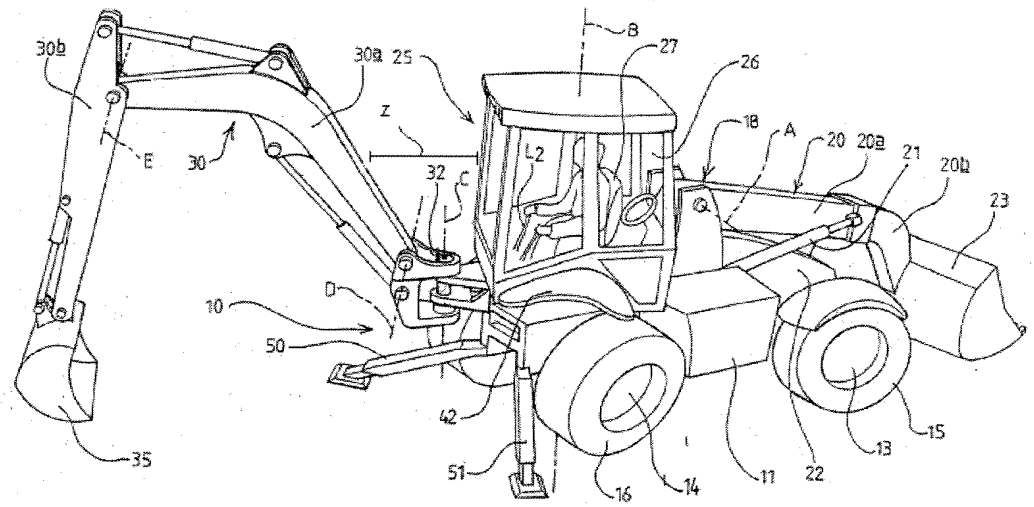
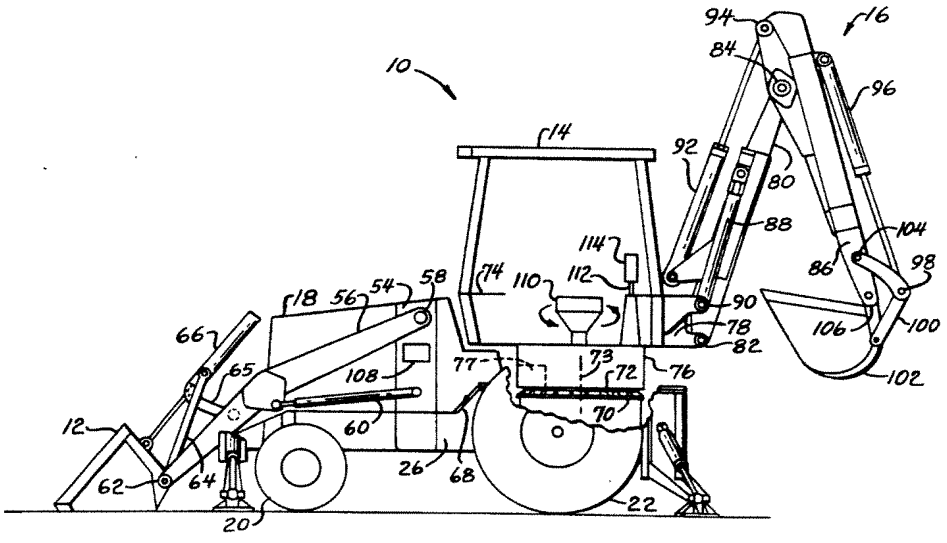


FIG 1

As seen above, the excavator arm 30 is spaced from the cab by distance Z which is greater than prior art excavator arms such as the excavator arm of Beck. Consequently, the operator can rotate the cab clockwise, and slew the arm counter clockwise. This allows the operator to dig in tight spaces, and allows the operator to have a better view of the excavation.

By comparison, the type of machine disclosed by Beck is shown below (in figure 1):



Prior art excavator arms were considerably closer to the cab, thus limiting the field of view of the operator sitting in the cab. In other words, in devices such as the Beck device, the operator's view is obstructed both by 1) the proximity of the excavator arm; and 2) the fact that the bucket 102 is directly in the operator's line of sight. With these comparisons in mind, we turn to the present rejections.

A reference concerned with computer-controlled, single axis rotation in the field of industrial robotics is outside the field of endeavor of combined excavating and loading machines, is not reasonably pertinent to the problem of cab rotation and slew arm rotation based on human input, and thus Tellden is non-analogous art

"In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of the applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992). The applicants respectfully submit that Tellden 1) is not in the field of the applicants' endeavor; and 2) is not reasonably pertinent to the particular problem with which the inventor was concerned.

First, as outlined in Par. 5 of the Declaration of Simon John Ratcliffe, submitted herewith, the field of endeavor relative to the present application is the design of combined excavating and loading machines of the type that are driven to a work site by a human operator. At the work site, the human operator operates a slewable excavating arm at one end of a rotatable cab, and a loading arm at the other end of the machine. Thus, the cab rotates about one axis, while the slewable arm rotates about a separate slew axis.

Tellden, on the other hand, is concerned with industrial robotics, and provides a back-up safety stop for a computer-controlled robotic arm that rotates about a single axis. Further, the device of Tellden works in a controlled environment, and does not need to account for operator inputs that create a slewing excavator arm in conjunction with a rotatable cab. Thus, Tellden only needs to account for computer-controlled rotation of the robotic arm about a single axis, rather than having to account for human operator inputs, in conjunction with cab rotation about one axis and slew arm rotation about a separate slew axis. Taking these facts in conjunction with the fact that Tellden is an industrial robot, while the present invention is a combined excavating and loading machine, it is clear that Tellden is clearly outside the applicant's field of endeavor. For at least this reason, Tellden is non-analogous art, and

therefore there can be no proper *prima facie* case of obviousness based even in part on Tellden.

Next, as supported by Par. 6 of the Declaration of Simon John Ratcliffe, submitted herewith, the Tellden reference is not pertinent. "A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." In re Clay, 966 F.2d 656, 659 (Fed. Cir. 1992). The claimed invention is concerned with the problem of providing a human-operated machine that prevents the slew arm from damaging the engine compartment of the combined excavating and loading machine, while still allowing cab rotation about one axis in conjunction with slew arm rotation about another axis. Thus, the claimed invention should allow the operator to rotated to the cab to the limit, *and* allow the operator to slew the slew arm in the direction of the cab. Thus, the problem addressed by the claimed invention is preventing a collision with the engine compartment on a device having operator inputs and not one, but two rotational axes. Tellden, of course, is much too limited, as Tellden 1) relies on more predictable computer control, and 2) operates on the basis of single axis rotation. One simply would not look to a computer-controlled, single axis device which is used in a tightly controlled and stationary industrial setting, and which has nothing whatsoever to do with the claimed invention, in order to solve problems relating to allowing two-axis rotation based on human inputs in a combined excavating and loading machine. Therefore, it is readily apparent that the Tellden reference is not reasonably pertinent to the problem being addressed by the present inventor. For this reason as well, no proper *prima facie* case of obviousness can be based on the Tellden reference.

It is well accepted law that non-analogous art can never establish obviousness, *prima facie* or otherwise. Accordingly, Tellden cannot be used to make an obviousness rejection. Therefore, any rejection based even in part on Tellden is overcome, and the claims are in allowable form.

If a reference *requires* a full 360 degrees of cab rotation, but the needed modification renders the cab u*nable* to rotate past 300 degrees, then the needed modification renders the reference unsuitable for its intended purpose

Claim 1 positively recites that the superstructure rotate no more than 300 degrees, claim 19 recites that the superstructure rotates less than 360 degrees, and claim 20 and new claim 21 recite that the superstructure rotates no more than 300 degrees.

By comparison, Beck explicitly teaches the importance of 360 degree cab rotation. For example, Beck teaches that "a primary object of the present invention [is] to provide an improved construction machinery vehicle that combines a front end loader attachment with a backhoe attachment connected **to a cab that rotates a complete revolution of three hundred sixty degrees**." Emphasis added, see Beck col. 1, line 65 to col. 2, line 2. Moreover, Beck teaches that this object is achieved by "a circular bearing arrangement secured and supported by the main frame, a rotatable cab assembly disposed upon the bearing arrangement and **adaptable to rotate thereon three hundred sixty degrees**." Emphasis added, id. at col. 2, lines 23-26. Beck repeatedly emphasizes this 360 degree feature. The Abstract touts the ability to rotate 360 degrees, the specification describes the ability to rotate 360 degrees at least six (6) times, and each independent claim positively recites the ability of the Beck device to rotate 360 degrees. In fact, each independent claim recites this ability not once, but *three* (3) times. Consequently, at least one of the intended purposes of Beck is to provide a cab that can rotate a full 360 degrees.

It is well accepted law that if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. See MPEP 2143.01.V. There can be no suggestion to modify Beck so extensively that the intended purpose of Beck is destroyed, and therefore there can be no proper *prima facie* case of obviousness based on Beck. Nothing in Kobayashi can cure these problems with Beck. Therefore, all rejections based even in part on Beck are overcome for at least the foregoing reason, and claims 1-8, 11-16 and 19-21 are in allowable form for at least this reason.

Moreover, by modifying Beck as proposed in the official action with the excavator arm of Kobayashi, the excavating arm mount would necessarily extend a distance away from

the cab of Beck (far enough to accommodate a slew bracket defining the slew axis). With reference to Fig. 1 of Beck above, there is very little space between the cab 14 and the engine compartment 18. The slew mount required to modify the Beck device with the excavator arm of Kobayashi would cause the slew mount to contact the engine compartment 18 before the cab 14 could rotate through 360 degrees. Because Beck explicitly teaches the importance of the cab 14 being capable of rotating through 360 degrees, such a modification would require extensive re-design of the Beck machine, or else Beck would be unsuitable for its intended purpose. Again, absent hindsight, there can be no motivation to modify Beck with the excavator arm of Kobayashi. Moreover, one would not limit the rotation of the swivel deck on Kobayashi either, and nothing in Kobayashi can cure the underlying problem that there is no proper suggestion to make the needed modification to Beck. Once again, there can be no proper *prima facie* case of obviousness, and claims 1-8, 11-16 and 19-21 are in allowable form or this reason as well.

There is no proper suggestion to look to a reference that expressly teaches sensors that prevent cab/working arm collisions by disabling the hydraulics, and then modify the reference by discarding those expressly-taught sensors and the hydraulic-disabling system

Beck recognizes the possibility of the excavator arm contacting the engine compartment during rotation, and thus Beck uses 108 to prevent such contact. The sensors 108 of Beck are located on the engine compartment and remove hydraulic power from the cab, thus preventing contact between the excavator arm and the engine compartment 18. Of course, the modification needed to reach the claimed invention would render the expressly-taught sensors of Beck either entirely superfluous and without function, and would render the connection of the sensors to the hydraulic system without function. One simply would not look to Beck, see the expressly-taught sensors and the hydraulics-disabling features, end then completely eliminate those systems. See MPEP 2141.02.VI, which states, in part, that "[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." Further, the complicated sensor/hydraulic-disabling system of Beck, which is needed to disable a relatively simplemachine having a rotatable cab but a fixed, non-slewable arm, effectively criticizes or discourages the claimed solution which operates on a more complicated machine in which the cab rotates and the arm slews. Again, Kobayashi cannot cure the underlying problem that there is no viable

suggestion to make the needed modification to Back. Based on the foregoing, again there can be no proper *prima facie* case of obviousness, and the rejections must be withdrawn.

New claim 21 positively recites, in part, a combination excavating and loading machine comprising a body having a front end and a rear end, the body carried on a steerable wheeled ground engaging structure, a loading arm assembly mounted on the body and extending forwardly of the body, a superstructure including an operator's cab, the superstructure mounted to the body and rotatable relative to the body about a generally upright first axis, the superstructure arranged to be rotationally fixed by releasable superstructure locks, a slew mounting coupled to the superstructure and defining a generally upright slew axis, a slewable excavating arm mounted to the slew mounting and slewable about the slew axis, the excavating arm arranged to permit the arm to be raised and lowered about a generally horizontal axis, and wherein the superstructure is arranged to abut mechanical stops in order to limit the range of rotation of the superstructure relative to the body to no more than 300 degrees.

As outlined above, Tellden is non-analogous art. The modifications needed to reach claim 21 would render Beck unsuitable for its intended purpose, and would require one to discard expressly-taught aspects of Beck. Nothing in Kobayashi can cure these deficiencies in Beck. New claim 21 is therefore in allowable form.

With further respect to dependent claim 3, the rejection is without merit. Despite coming from a non-analogous field, the stop arms of Tellden incorporate destructive electrically conductive material. See col. 3, lines 56-68 of Tellden. When the stops are contacted, the conductive material (which may be a ceramic tube) is destroyed, and the entire stop pin has to be replaced before the robot may be operated again. Unless one were to discard the destructive circuitry, one would have superstructure locks that render the machine inoperable, unless one were to discard the protective circuitry that renders the device inoperable. Yet, there can be no proper suggestion to look at the Tellden reference and then immediately discard such an integral aspect of that device. Accordingly, there cannot a proper *prima facie* case of obviousness based on Tellden, and claim 3 is allowable.

CONCLUSION

It is respectfully submitted that this response traverses all of the Examiner's rejections. Reconsideration and withdrawal of the rejections are respectfully requested. Applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

By _____

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